

# INDIANA Epidemiology NEWSLETTER



Epidemiology Resource Center  
2 North Meridian Street, 5-K  
Indianapolis, IN 46204  
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## Hepatitis Awareness Month: An Overview of Viral Hepatitis in Indiana

**Jennifer McCarthy, Perinatal Hepatitis B Field Investigator**  
**Lee Bray, Enteric/Foodborne Disease Epidemiologist**  
**Julie Butwin, Chief Nurse Consultant**  
**Cheryl Pearcy, Hepatitis C Coordinator**

May is Hepatitis Awareness Month. Hepatitis is a serious infection that deserves close attention. In the United States in 2003, more than 160,000 new cases of viral hepatitis were reported, and chronic hepatitis infections affect millions of Americans.

Hepatitis is defined as an inflammation of the liver. Several viruses can cause hepatitis, and three forms of viral hepatitis—A, B, and C—are prevalent in the United States. Symptoms include fatigue, loss of appetite, diarrhea, nausea, vomiting, and jaundice. Adults are more likely to exhibit symptoms than children. Unfortunately, no cure exists for viral hepatitis, only medical management of the disease. Vaccines are available to prevent hepatitis A and B, but there is no vaccine to prevent hepatitis C.

### Hepatitis A Virus (HAV)

Hepatitis A is usually transmitted by food or water contaminated with fecal material. HAV can also be transmitted from person to person via the fecal-oral route. The illness lasts anywhere from two to six months. There is no long-term or chronic infection. A blood test (IgM anti-HAV) is used to confirm HAV infection. In 2003, an estimated 61,000 new cases of HAV infection were reported in the U.S.

Luckily, there is an immune globulin that offers limited protection following exposure. There is also a vaccine to provide long-term protection. The hepatitis A vaccine, a two-dose vaccine, is safe, effective, and highly immunogenic. At least 97% of people have protective levels of antibody within one month after receiving the first dose of the vaccine, and 100% have protective levels after the second dose. While widespread vaccination is not currently recommended, the vaccine is recommended for:

- persons ages 2 years and older traveling to countries with high rates of hepatitis A,
- persons who live in communities that have prolonged outbreaks of hepatitis A or high rates of hepatitis A,
- men who have sex with men,
- persons who use street drugs,
- persons with chronic liver disease,
- persons who receive clotting factor concentrates.

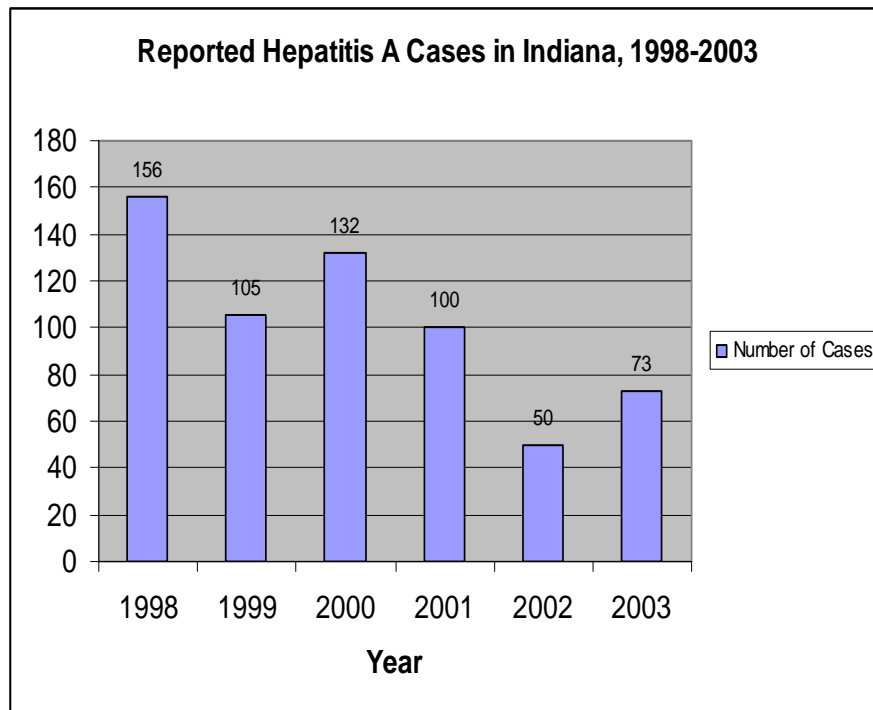
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A 2003 outbreak of HAV infection associated with consumption of raw or undercooked green onions from a Chi Chi's restaurant in western Pennsylvania underscores the importance of vaccinating at-risk persons. Unfortunately, this outbreak resulted in more than 500 reported cases and at least 3 deaths.

Indiana is not considered as a high-risk state for hepatitis A. The graph below illustrates the number of HAV cases in Indiana during the six-year period, 1998-2003.

Figure 1.



Although Indiana has a small number of reported cases, the results of a single infection can be dramatic. For example, during the summer of 2004, it was determined that a food worker was hepatitis A positive, which resulted in providing nearly 6,000 people with immune globulin (IG) to protect against infection via this single exposure. Luckily, no other infections were reported; however, this single event cost Indiana approximately \$132,000 in IG alone. The \$132,000 does not include medical supplies, man-hours, etc.

### **Hepatitis B (HBV)**

Hepatitis B virus is transmitted by direct contact with infected blood or body fluids. Infection is confirmed through the results of a blood test (HBsAg). Hepatitis B can result in short-term (acute) infection lasting about six months or lifelong (chronic) infection.

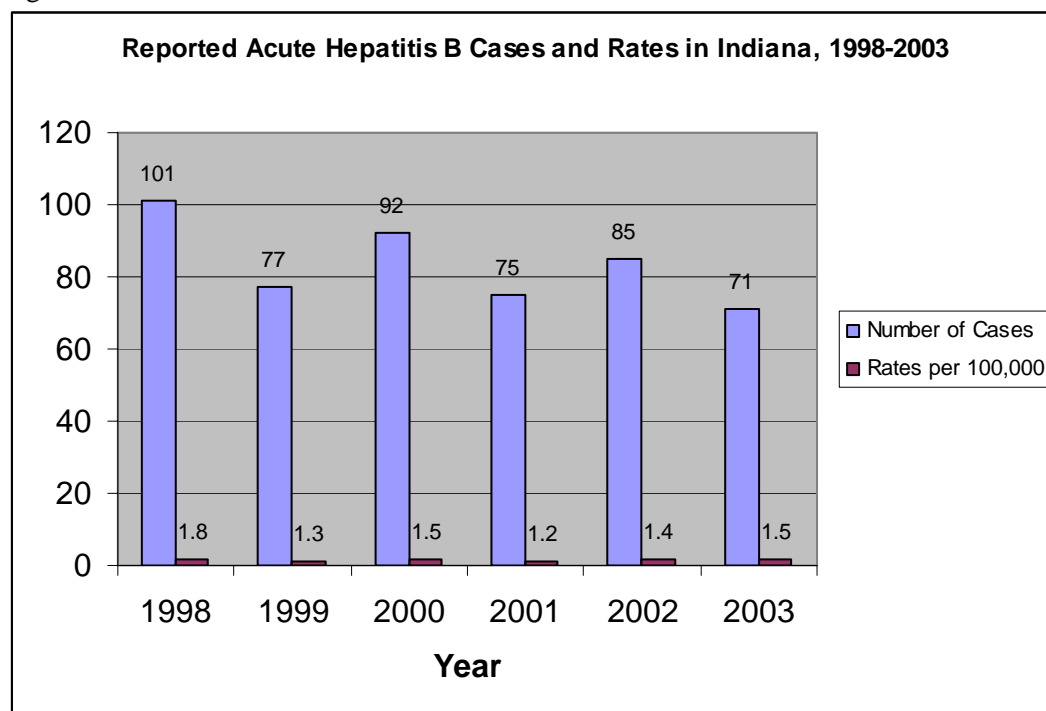
Chronic infection may develop in about 90% of persons exposed at birth to HBV but only in about 5% of those exposed as adults. In the U.S., about 5,000 people die each year from chronic liver disease and liver cancer caused by HBV.

About 1.2 million people chronically infected with HBV live in the United States. In the U.S. in 2003, there were approximately 73,000 new reported cases, which is a decrease from the peak of 260,000 in the 1980s. The first vaccine for HBV was introduced in 1982. The vaccine usually requires three doses to provide complete protection. The vaccine is safe, effective, and provides at least 15 years of demonstrated immunity. Currently, a booster dose of vaccine is not recommended. There is also an immune globulin specific for hepatitis B that provides temporary protection following an exposure. Routine vaccination is recommended for:

- All babies at birth,
- Children (ages 0–18 years) who have not been vaccinated,
- People who travel or live in endemic areas,
- Sexual and household contacts of an infected person,
- Men who have sex with men,
- People who have multiple sexual partners,
- People who are injection drug users,
- Health care and public safety workers,
- Hemodialysis patients.

The following chart shows the six-year (1998-2003) trend for HBV infection in Indiana.

Figure 2.



Indiana is one of 47 states that includes hepatitis B vaccination as part of the childhood vaccine series for school entry (kindergarten or grade 1). Beginning in July 2005, every child who enters grade 9 and grade 12 must be vaccinated for hepatitis B. Hepatitis B vaccination is also recommended for teenagers prior to high school graduation. The communicable disease law requires the reporting of hepatitis B infection during pregnancy by the health care provider, testing facility, and the hospital where the delivery occurs. Most women in Indiana are tested for hepatitis B during pregnancy. Because newborns are at an increased risk to develop chronic hepatitis B, administration of a birth dose of the hepatitis B vaccine is recommended. Newborns of a hepatitis B-positive woman are at the highest risk and should also receive the hepatitis B immune globulin (HBIG). For example, up to two thirds of infected infants have contracted the disease from an infected household member or caregiver. As a result, all infants should receive the birth dose of hepatitis B vaccine to protect them from a household infection. Unfortunately, only 75% of the hospitals in Indiana routinely administer the birth dose.

Indiana has a program to manage cases involving hepatitis B-positive pregnant women. The responsibilities of the Perinatal Hepatitis B Program include case management, disease prevention, and disease education. In 2003, 113 infants were born to identified hepatitis B-positive women. Due to the efforts of the Perinatal Hepatitis B Program, 96% of the 113 infants received the appropriate treatment at birth. For more information, please contact Beverly Sheets, Perinatal Hepatitis B Supervisor, Immunization Program, Indiana State Department of Health, at 317.501.5722 or [hepbbev@aol.com](mailto:hepbbev@aol.com).

## Hepatitis C

The hepatitis C virus (HCV), transmitted by direct blood-to-blood contact, is the leading cause of liver transplants. A recent survey concluded that 1.8 percent of Americans (3.9 million) have been infected with HCV. Of those 3.9 million, most (2.7 million) are chronically infected. Indiana reported 5,134 new confirmed HCV positive tests in 2003 and 6,314 in 2002. Unlike hepatitis A and B, there is no vaccine or immune globulin to provide protection from hepatitis C.

The leading risk factor for acquiring HCV is injection drug use (IDU); IDUs account for 60% of HCV infection. Blood transfusion recipients (acquired prior to the implementation of blood supply screening in 1992) account for 10% of the infection. Sexual transmission accounts for 15% of infection, although transmission is highest among individuals who have had 50 or more lifetime partners. Transmission among monogamous couples is extremely low. Five percent of HCV infection is attributed to hemodialysis, health care workers, and mother-to-child transmission. The remaining 10% is of unknown or not identifiable causes.

Hepatitis C surveillance in Indiana is administered through mandatory laboratory reporting. Because these reports come from laboratories and not from physicians, demographic information, such as the patient's race or county of residence, is frequently lacking. Also lacking from this type of reporting is risk factor (how the disease is acquired) information. The omission of these data impedes the best direction of resources to curtail the spread of infection. Therefore, as is true in the other 49 states, Indiana relies on the Centers for Disease Control and Prevention (CDC) recommendations for conducting hepatitis C intervention activities.

The focus of prevention and education activities in Indiana is multifaceted. The burgeoning cost of HCV infection to Indiana's health care system requires the integration of HCV services into existing public health care settings such as HIV/STD programs, neighborhood health centers, and local health departments.

To help reduce the incidence of HCV disease, it is necessary to collaborate with other established public health programs including HIV/STD, Immunization, and Indiana Department of Correction (DOC) and Mental Health. Indiana is a leader among states in beginning the hepatitis integration process on a statewide basis and implementing it at the local level.

Indiana is proceeding with this integration in the following ways:

1. We have established guidelines for the local health departments (LHD) to follow regarding the reporting of HCV infections.
2. We are conducting HCV training programs for the LHD nurses, disease intervention specialists (counselors for clients serviced at STD and HIV clinics), and HIV caseworkers throughout Indiana on an as-needed basis. These programs focus on the medical course of infection, interpretation of test results, community resources for treatment referrals, and the integration of patient education and counseling techniques.
3. We have developed protocol for testing at-risk clients in HIV and STD settings.
4. We are providing HAV and HBV vaccine for at-risk clients in STD clinics. Programs offering this service include:
  - a. Allen County Health Department, Ft. Wayne;
  - b. Bartholomew County Health Department, Columbus;
  - c. Bell Flower Clinic, Indianapolis;
  - d. Community Health Services, Bloomington;
  - e. East Chicago Health Department, East Chicago;
  - f. Elkhart County Health Department, Elkhart;
  - g. Gary City Health Department;
  - h. LaPorte County Health Department, LaPorte and Michigan City;
  - i. Planned Parenthood of Lafayette, Lafayette;
  - j. St. Joseph County Health Department, South Bend;
  - k. Vanderburgh County Health Department, Evansville;
  - l. Vigo County Health Department, Terre Haute;
  - m. Madison County Health Department, Anderson;
  - n. Howard County Health Department, Kokomo;

- o. Healthy Teens and Families, Kokomo;
- p. Porter County Health Department, Valparaiso;
- q. Clark County Health Department, Jeffersonville.

If you are interested in hosting an HCV educational training or one-day seminar in your area, please contact: Cheryl Percy, Hepatitis C Coordinator, HIV Division, Indiana State Department of Health, at 317.233.8602 or [cpercy@isdh.in.state.us](mailto:cpercy@isdh.in.state.us).

## Viral Hepatitis Conclusion

The charts below illustrate the number of high-risk adults who were vaccinated in Indiana STD clinics.

Figure 3.

### Adult Hepatitis B Dose

Indiana STD Clinics 2004

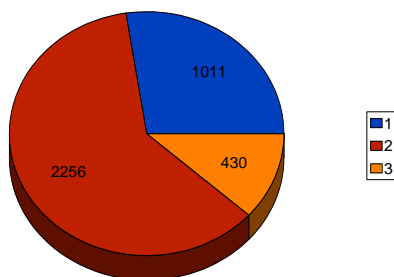
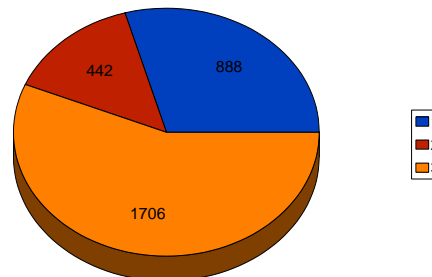


Figure 4.

### Adult Twinrix Doses

Indiana STD Clinics 2004



According to the CDC and the 2003 National Immunization Survey, approximately 92.6% of Indiana children completed the hepatitis B vaccination series by age 24 months. Indiana has a Vaccines for Children (VFC) program that provides free vaccine, including the vaccines for hepatitis A (when recommended) and hepatitis B, to children (ages 0-18 years) if they are on Medicaid or without health insurance. To become a VFC provider, please contact Beverly Sheets, VFC Supervisor, Immunization Program, Indiana State Department of Health, at 317.501.5722 or [hepbbev@aol.com](mailto:hepbbev@aol.com).

The American Liver Foundation (ALF) has an Indiana Chapter and works closely with the Indiana State Department of Health (ISDH). The purpose of this partnership is to provide educational opportunities for Indiana residents. The Web-site address for ALF is [www.americanliverfoundation.org](http://www.americanliverfoundation.org).

The ISDH has established a working group for viral hepatitis comprised of representatives from each of the viral hepatitis program areas. This group will serve as the foundation for forming a coalition necessary to create a state strategic plan to address hepatitis issues in Indiana.

If you are interested in participating in ALF or in the strategic planning process, please contact: Cheryl Percy, Hepatitis C Coordinator, HIV Division, Indiana State Department of Health, at 317.233.8602 or [cpercy@isdh.in.state.us](mailto:cpercy@isdh.in.state.us).

## West Nile Season Arriving Soon

James Howell, D.V.M., M.P.H.  
ISDH Veterinary Epidemiologist

Indiana will shortly be entering its fourth summer season with West Nile virus as a health threat. Over 300 human cases have occurred in the past three years that human cases have been reported in Indiana. The case investigations have given us a picture of West Nile's impact that is similar to that seen across the county. Every age group can be affected, but those in older age groups (above 50 years of age) tend to have higher rates of clinical illness and tend to suffer more severe disease. It is important to all of our citizens understand that West Nile can be a significant health risk, but is one that can be prevented. In the past we have stressed efforts at mosquito breeding site reduction and use of personal protective measures as prevention steps.

During the spring of 2004, questions about West Nile virus and its prevention were included in the Behavioral Risk Factor Surveillance System (BRFSS) questionnaire to measure the effectiveness of the West Nile virus prevention message. While the sample size was small, the results are interesting in that the West Nile virus message appears to have been received, but improvements in some areas are required. The table below provides some highlights to the results of the survey.

1. During summer evenings, how often to you spend at least 30 minutes outside doing things like sitting, working in your yard, or taking a walk?
  - Most evenings – 61%
  - At least once a week – 29.8%
  - Less than once a week – 5.9%
2. Last summer, did you take any of the following measures to protect yourself from mosquito bites?
  - a. Avoid outdoor areas where you knew there were mosquitoes- Yes - 52.9%
  - b. Did you use insect repellent on your skin or clothing – Yes - 69.6%
3. How often did you use repellent? Always - 26.7%, Sometimes - 63.7%
4. Last summer, did you take any of the following measures to protect yourself from mosquito bites?
  - a. Did you make sure there were no holes in your screens? Yes - 75.4%
  - b. Did you remove standing water from around your house? Yes - 65.3%
  - c. Did you check and clean your gutters? Yes - 66.3%
5. Has anyone in Indiana ever been seriously ill or died from West Nile virus? Yes - 48.6%
6. Has West Nile virus been detected in your community in birds, mosquitoes, or people? Yes – 34.5%

It appears that more than 50% aren't aware that West Nile virus has been found in every county in the state or that over 300 individuals have been ill with a West Nile infection. Since most Indiana citizens spent some time out-of-doors during prime mosquito biting times, it is encouraging to see that almost 70% of those surveyed are using insect repellants, but disappointing that just over one-quarter always use repellants. The use of repellants to prevent mosquito bites is effective not only to prevent West Nile virus infections, but also prevents infections with Indiana's other mosquito carried viruses (St. Louis Encephalitis, LaCrosse Encephalitis, and Eastern Equine Encephalitis) and Indiana's tick-borne diseases (Rocky Mountain Spotted Fever, Lyme Disease, and Ehrlichiosis).

During the upcoming West Nile virus transmission season, we should continue to stress the risk of disease transmission using the bird and mosquito surveillance data. It has been suggested that effective media messages should be delivered in twenty-seven words, given in nine seconds, repeated three times. One statement that meets those qualifications is: *We can prevent the transmission of West Nile virus by: removing mosquito breeding sites from around our homes; and using personal protective methods to prevent mosquito bites.*

## Rubella Outbreak in Canada

Wayne Staggs, M.S.  
ISDH Vaccine Preventable Epidemiologist

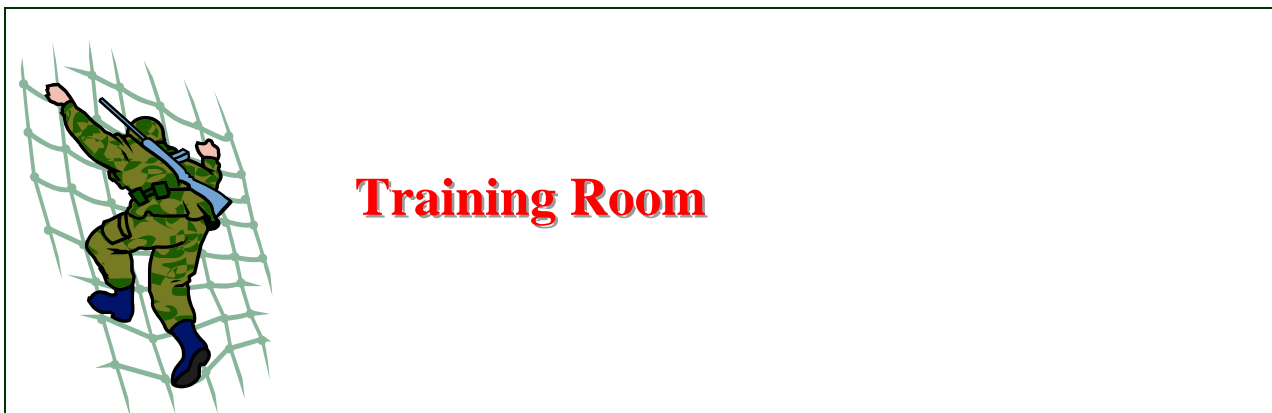
As of May 17, 2005, 214 laboratory-confirmed cases of rubella have been reported in southwest Ontario, Canada this year. This outbreak is occurring in a community with low measles, mumps and rubella vaccination coverage and strong social adherence. The proportion of cases in vaccinated individuals is low with only .3% of the cases having been vaccinated.

The National Immunization Program has advised state health departments that a member of the Amish community in Canada has now been laboratory confirmed. **Since travel among the Amish across the US-Canada border is common, health care providers should consider the diagnosis of rubella in rash cases in this group.** Rubella symptoms are often mild, and up to 50% of infections may be subclinical or inapparent. In children, **rash** is usually the first manifestation and a prodrome is rare. In older children and adults, there is often a 1-5 day prodrome with low-grade fever, malaise, lymphadenopathy, and upper respiratory symptoms preceding the rash. The rash of rubella usually occurs initially on the face and then progresses from head to foot. It lasts about 3 days and is occasionally pruritic. Lymphadenopathy may begin a week before the rash and last several weeks. Postauricular, posterior cervical, and suboccipital nodes are commonly involved. The incubation period of rubella is 14 days with a range of 12 to 23 days. Arthralgia and arthritis occur so frequently in adults that they are considered by many to be an integral part of the illness rather than a complication. Rubella infection acquired during early pregnancy can lead to miscarriage or severe birth defects known as Congenital Rubella Syndrome (CRS). CRS occurs in up to 90% of infants born to mothers who are infected in the first trimester of pregnancy.

**A suspected case of rubella should be reported to the local or state health department immediately** and any person suspected of having rubella should have serological testing performed. Recent rubella infection can be serologically confirmed by the presence of serum rubella IgM. For IgM analysis, sera should be collected at least three days following rash onset and sent to the Indiana State Department of Health Laboratory. Local and state health department staff can assist in ensuring that specimens arrive at the ISDH Laboratory as soon as possible. State Health Department staff will also perform a standard investigation, including the interviewing the patient and any exposed contacts (especially pregnant women).

Rubella was declared eliminated endemically from the United States in March of this year (see [Achievements in Public Health: Elimination of Rubella and Congenital Rubella Syndrome --- United States, 1969--2004](#)) Given that rubella is still a disease of high incidence in other areas of the world, and in light of the Canadian outbreak, we should continue our vigilance against rubella and CRS by 1) maintaining high vaccination rates among children; 2) ensuring vaccination among women of childbearing age, especially women born outside the United States; 3) continuing surveillance of both rubella and CRS; and 4) responding rapidly to any confirmed case report or outbreak.

For additional information on rubella disease you may go to the following Web site <http://www.cdc.gov/nip/publications/pink/rubella.rft> and click on rubella).



## Indiana State Department of Health Immunization Program Presents: “Child and Adolescent Immunizations from A to Z”

The ISDH Immunization Program and Health Educators are offering this free, one-day educational course on all aspects of immunization practices. Topics include:

- Principles of Vaccination
  - Overview of the immune system
  - Classification of vaccines
- An Overview of Vaccine-Preventable Diseases
- General Recommendations on Immunization
  - Timing and spacing
  - Contraindications and precautions to vaccination
- Safe and Effective Vaccine Administration
  - Prior to administration
  - Administration
  - Documentation and reminder/recall
  - Adverse Events
- Safe Vaccine Storage and Handling
- Indiana Requirements
  - Schools
  - Daycare/Head Start
  - Exemptions
- Tools to Read Immunization Records
- Vaccine Misconceptions
  - MMR and autism
  - Thimerosal and mercury
  - Overloading the immune system
  - Influenza vaccine
- Reliable Resources

This course is designed for all immunization providers and staff. Presentation of this course takes six hours or can be customized to provide the components needed for your office or clinic staff. A training manual and certificate of attendance are provided to all attendees.

Courses are held throughout Indiana about four times per month. The schedule can be seen at [www.in.gov/isdh/programs/immunization/ImmunizationTraining/Calendar.htm](http://www.in.gov/isdh/programs/immunization/ImmunizationTraining/Calendar.htm).

All persons involved in immunizations are encouraged to attend a course in their area. **Registration is required.** To attend or schedule/host a course in your area or for more information on “Child and Adolescent Immunizations from A to Z” and other immunization education opportunities, please contact Beverly Sheets at 317.501.5722 or via e-mail at [hepbbev@aol.com](mailto:hepbbev@aol.com).



## Mark your calendars NOW!

Indiana Immunization Fall Awards Conferences:

**When:** **Sunday, Oct. 2, 2005**, "Reception with Speakers"

**Monday, Oct. 3, 2005**, "Conference"

**Time:** 8:30 am to 3:30 pm

**Where:** Indianapolis Hilton, downtown

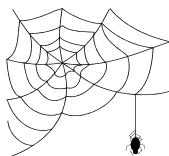
**Speakers:** William Atkinson, MD, MPH  
Information, Education and Partnership Branch National Immunization Program  
Centers for Disease Control and Prevention

Patricia Stinchfield, RN, CNP  
The Children's Immunization Project  
St. Paul, Minnesota  
(newest member of the ACIP)

Check out the new ISDH Immunization Program Web site at

<http://www.in.gov/isdh/programs/immunization.htm>.

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## *Wonderful Wide Web Sites*

### **ISDH Data Reports Available**

**The ISDH Epidemiology Resource Center has the following data reports and the Indiana Epidemiology Newsletter available on the ISDH Web Page:**

[http://www.in.gov/isdh/dataandstats/data\\_and\\_statistics.htm](http://www.in.gov/isdh/dataandstats/data_and_statistics.htm)

Indiana Cancer Incidence Report  
(1990, 95, 96, 97, 98, 99)

Indiana Mortality Report  
(1999, 2000, 2001, 2002)

Indiana Cancer Mortality Report  
(1990-94, 1992-96, 1999)

Indiana Natality Report  
(1998, 99, 2000, 2001, 2002)

Indiana Health Behavior Risk Factors  
(1999, 2000, 2001, 2002)

Indiana Induced Termination of Pregnancy Report  
(1998, 99, 2000, 2001, 2002)

Indiana Health Behavior Risk Factors (BRFSS)  
Newsletter (9/2003, 10/2003, 6/2004, 9/2004,  
4/2005)

Indiana Marriage Report  
(1995, 97, 98, 99, 2000)

Indiana Hospital Consumer Guide  
(1996)

Indiana Infectious Disease Report  
(1997, 98, 99, 2000, 2001)

Public, Hospital Discharge Data  
(1999, 2000, 2001, 2002)

Indiana Maternal & Child Health Outcomes &  
Performance Measures  
(1990-99, 1991-2000, 1992-2001)

## **HIV Disease Summary**

**Information as of April 30, 2005 (based on 2000 population of 6,080,485)**

### *HIV - without AIDS to date:*

333	New HIV cases from May 2004 thru April 2005	12-month incidence	5.48 cases/100,000
3,650	Total HIV-positive, alive and without AIDS on April 30, 2005	Point prevalence	60.03 cases/100,000

### *AIDS cases to date:*

363	New AIDS cases from May 2004 thru April 2005	12-month incidence	5.97 cases/100,000
3,736	Total AIDS cases, alive on April 30, 2005	Point prevalence	61.45 cases/100,000
7,616	Total AIDS cases, cumulative (alive and dead)		

## REPORTED CASES

 of selected notifiable diseases

Disease	Cases Reported in April MMWR Weeks 14-17		Cumulative Cases Reported January -April MMWR Weeks 1-17	
	2004	2005	2004	2005
Campylobacteriosis	22	31	98	70
Chlamydia	1,309	1,478	5,956	6,591
<i>E. coli</i> O157:H7	1	3	12	7
Hepatitis A	4	9	13	15
Hepatitis B	6	2	9	7
Invasive Drug Resistant <i>S. pneumoniae</i> (DRSP)	20	24	58	79
Invasive pneumococcal (less than 5 years of age)	6	12	20	28
Gonorrhea	405	546	2,052	2,521
Legionellosis	2	1	9	2
Lyme Disease	1	0	1	2
Measles	0	0	0	0
Meningococcal, invasive	1	2	8	7
Pertussis	12	31	21	114
Rocky Mountain Spotted Fever	1	0	1	0
Salmonellosis	31	41	111	84
Shigellosis	5	15	47	29
Syphilis (Primary and Secondary)	5	2	15	17
Tuberculosis	9	14	45	42
Animal Rabies	1 (skunk)	1	2 (skunk)	2 (bats)
For information on reporting of communicable diseases in Indiana, call the ISDH Epidemiology Resource Center at 317-233-7125.				

**Indiana**  
***Epidemiology***  
**Newsletter**

The *Indiana Epidemiology Newsletter* is published by the Indiana State Department of Health to provide epidemiologic information to Indiana health professionals and to the public health community.

*State Health Commissioner*  
Judith A. Monroe, MD

*Deputy State Health Commissioner*  
Sue Uhl

*State Epidemiologist*  
Robert Teclaw, DVM, MPH, PhD

*Editor*  
Pam Pontones, MA

*Contributing Authors:*  
Lee Bray  
Julie Butwin, MSN  
James Howell, DVM, MPH  
Jennifer McCarthy  
Cheryl Percy  
Wayne Staggs, MS

*Design/Layout*  
Mike Wilkinson, BS